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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **LIPID-ASSOCIATED PROTEINS**

(57) Abstract: Various embodiments of the invention provide human lipid-associated molecules (LIPAM) and polynucleotides which identify and encode LIPAM. Embodiments of the invention also provide expression vectors, host cells, antibodies, agonists, and antagonists. Other embodiments provide methods for diagnosing, treating, or preventing disorders associated with aberrant expression of LIPAM.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35946

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07K 14/435  
US CL : 530/350

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 530/350

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST, STN; search terms: lipid associated protein, saposin like protein

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99/01554 A1 (ZYMOGENETICS, INC), 14 January 1999 (14.01.1999), see claim 8	1, 2, 17, 18 and 56

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
* Special categories of cited documents:		"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance		"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date		"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means			
"P" document published prior to the international filing date but later than the priority date claimed			

Date of the actual completion of the international search	Date of mailing of the international search report
17 September 2004 (17.09.2004)	20 DEC 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer <i>Robert A. Wax</i> Robert A. Wax Telephone No. (703) 308-1235

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/35946

**Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1, 2, 17, 18 and 56 with regard to SEQ ID No.: 1

**Remark on Protest**  

- The additional search fees were accompanied by the applicant's protest.  
No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

PCT/US03/35946

### BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Groups I-XXI, claims 1, 2, 17, 18 and 56-76, drawn to protein having SEQ ID No. 1-21. That is, Group I comprises SEQ ID No.: 1, Group II comprises SEQ ID No.: 2, etc.

Groups XXII-XLII, claims 3-7, 12, 13 and 77-97, drawn to DNA having SEQ ID No. 23-42. That is, Group XXII comprises SEQ ID No. 22, Group XXIII comprises SEQ ID No. 23, etc.

Groups XLIII-LXIV, claim 8, drawn to transgenic organism comprising DNA having SEQ ID No. 22-42. That is, Group XLIII comprises SEQ ID No. 22, Group XLIV comprises SEQ ID No. 23, etc.

Groups LXV-XXCV, claims 9-10, drawn to method of making polypeptide comprising expressing DNA having SEQ ID No. 23-42. That is, Group LXV comprises SEQ ID No. 22, Group LXVI comprises SEQ ID No. 23, etc.

Groups XXCVI-CVI, claims 11 and 30-45, drawn to antibodies to protein having SEQ ID No. 1-21 and methods of making and using them. That is, Group XXCVI comprises SEQ ID No. 1, Group XXCVII comprises SEQ ID No. 2, etc.

Groups CVII-CXXVII, claim 20, drawn to a method of screening a compound for effectiveness as an agonist of a polypeptide having SEQ ID No. 1-21. That is, Group XXCVI comprises SEQ ID No. 1, Group XXCVII comprises SEQ ID No. 2, etc.

Groups CXXVIII -CXLVIII, claim 23, drawn to a method of screening a compound for effectiveness as an antagonist of a polypeptide having SEQ ID No. 1-21. That is, Group CXXVIII comprises SEQ ID No. 1, Group CXXIX comprises SEQ ID No. 2, etc.

Groups CXLIX -CLXIX, claim 26, drawn to a method of screening for a compound that specifically binds to a polypeptide having SEQ ID No. 1-21. That is, Group CXLIX comprises SEQ ID No. 1, Group CL comprises SEQ ID No. 2, etc.

Groups CLXX-CXC, claim 27, drawn to a method of screening for a compound that modulates the activity of a polypeptide having SEQ ID No. 1-21. That is, Group CLXX comprises SEQ ID No. 1, Group CLXXI comprises SEQ ID No. 2, etc.

Groups CXCI-CCXI, claim 28, in part, drawn to a method of screening a compound for effectiveness in altering expression of a target polynucleotide having SEQ ID No. 22-42. That is, Group CXCI comprises SEQ ID No. 1, Group CXCII comprises SEQ ID No. 2, etc.

Groups CCXII-CCXXXII, claim 29, drawn to a method for screening for potential toxicity of a test compound using a polynucleotide having SEQ ID No. 22-42. That is, Group CCXII comprises SEQ ID No. 1, Group CCXIII comprises SEQ ID No. 2, etc.

Groups CCXXXIII-CCLIII, claims 46-55, drawn to a microarray comprising a polynucleotide having SEQ ID No. 22-42 and methods of using it.

The inventions listed as Groups I-CCLIII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the specification makes it abundantly clear that each polypeptide is different from the other polypeptides and each polynucleotide is different from the other polynucleotides. Therefore, claims relating to the polypeptides do not share the same special technical feature, nor do claims relating to the polynucleotides. Claim 1, part h, claims a biologically active fragment of the polypeptides. This reads on a single amino acid such as Alanine. Since part of the claimed subject matter is known in the art, the technical feature does not represent an advance over the prior art and, therefore, each invention lacks unity with any of the others.